

Name: _____

1. A 250.0 mL buffer solution that is 0.125 M $\text{HC}_2\text{H}_3\text{O}_2$ ($K_a = 1.8 \times 10^{-5}$) and 0.100 M in $\text{KC}_2\text{H}_3\text{O}_2$ has a pH of 4.65. What is the pH of the buffer solution after 0.030 mol of HCl have been added?

2. Consider the titration of 30.00mL of 0.180M methylamine (CH_3NH_2), $\text{pK}_b = 3.56$, with 0.200M HCl. Determine the equivalence volume and the pH at the following volumes of HCl added: **0 mL, 13.5mL, equivalence volume and 35.0mL**. Make sketch of the titration curve.